

# Why 'Ought' Detaches: Or, Why You Ought to Get With My Friends (If You Want to Be My Lover)

Silk, Alex

*License:*

Creative Commons: Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)

*Document Version*

Publisher's PDF, also known as Version of record

*Citation for published version (Harvard):*

Silk, A 2014, 'Why 'Ought' Detaches: Or, Why You Ought to Get With My Friends (If You Want to Be My Lover)', *Philosophers' Imprint*, vol. 14, 7. <<http://hdl.handle.net/2027/spo.3521354.0014.007>>

[Link to publication on Research at Birmingham portal](#)

**Publisher Rights Statement:**

Checked July 2015

**General rights**

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

**Take down policy**

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact [UBIRA@lists.bham.ac.uk](mailto:UBIRA@lists.bham.ac.uk) providing details and we will remove access to the work immediately and investigate.

# WHY 'OUGHT' DETACHES: OR, WHY YOU OUGHT TO GET WITH MY FRIENDS (IF YOU WANT TO BE MY LOVER)

*Alex Silk*

*University of Birmingham*

© 2014 Alex Silk

*This work is licensed under a Creative Commons  
Attribution-NonCommercial-NoDerivatives 3.0 License  
<[www.philosophersimprint.org/014007/](http://www.philosophersimprint.org/014007/)>*

"'Ought' is our most basic normative term. I understand it well."  
John Broome<sup>†</sup>

## 1. The detaching problem

Consider the following 'ought'-sentence:

- (1) You ought to take Michigan Avenue.

This sounds a bit odd out of the blue. A natural response to an utterance of (1) out of context might be, "You ought to take Michigan Avenue *to where*, or *for what purpose*?" However, situating (1) in the following practical argument seems to resolve such concerns.

- (1\*) (P1) If you want to go to the Hancock Building, you ought to take Michigan Avenue.  
(P2) You want to go to the Hancock Building.  
(C1) So, you ought to take Michigan Avenue.

In this context, the conclusion seems perfectly acceptable, and the argument lends strong support for the conclusion. By modus ponens, it seems we can derive—or "detach"—the unembedded 'ought'-claim in (C1) from the associated hypothetical imperative (P1) and its antecedent condition (P2).<sup>1</sup>

However, there's a well-known puzzle about whether unembedded 'ought'-claims can validly detach in this way. Consider (2).

- (2) You ought to torture innocent people with thumbscrews.

(2) is, well, false. Embedding (2) in the following argument does not seem to help its case:

---

<sup>†</sup>Broome 2005, 326.

<sup>1</sup>Several other types of detachment have been discussed in the deontic logic literature—e.g., "deontic detachment" and "unalterability detachment", where one derives an 'ought'-claim from an associated conditional 'ought' and the obligatoriness or unalterability, respectively, of its antecedent condition. I will not consider these forms of inference here. For discussion, see Greenspan 1975, Feldman 1986, Humberstone 1991, and Arregui 2010.

- (2\*) (P3) If you want to torture innocent people like they did in medieval times, you ought to torture them with thumb-screws.
- (P4) You want to torture innocent people like they did in medieval times.
- (C2) So, you ought to torture innocent people with thumb-screws.

Unlike in (1\*), the 'ought'-claim in the conclusion does not seem to be able to detach; your crazy goals and the means of realizing them seem irrelevant to your obligations not to torture innocent people. Call the problem of how certain objectionable 'ought'-claims like (C2) can be derived from associated conditionals and their antecedent conditions *the detaching problem*.

I will argue that a standard analysis of modals from formal semantics suggests a solution to the detaching problem. The general form of this solution has also been recently defended in independent work by Janice Dowell [2012]. However, Dowell's arguments against rival views are inconclusive (§2). I will offer improved arguments against these views, and others, in motivating my preferred solution. This solution also captures new data concerning the detaching problem and sheds light on the role of hypothetical imperatives and detached 'ought'-claims in practical reasoning (§3). Although modus ponens can be shown to fail with conditionals like (P1) and (P3), the cases in question do not constitute a failure of detachment in the sense that ethicists have cared about in discussions of the detaching problem (§4).

## 2. How not to solve the detaching problem

Conditionals like those in (1\*)–(2\*) that concern an agent's goal, intention, desire, or plan in the antecedent and a modal claim in the consequent about the agent's performance of a certain action are often called hypothetical imperatives<sup>2</sup> or anankastic conditionals. Call an ar-

<sup>2</sup>The conditionals we will be concerned with are obviously not genuinely hypothetical imperatives, as they contain no imperative clause. I follow the com-

ment of the form 'If want  $\phi$ , ought  $\psi$ ; Want  $\phi$ ; So, ought  $\psi$ ' whose conditional premise is an anankastic conditional an Anankastic Modus Ponens argument — or, AMP. (This name is contentious in several respects, as we will see. For concreteness I will express hypothetical imperatives with 'want'. This is neutral on the question of how ends are to be characterized.)

In response to the detaching problem, first, one might say that 'ought' is lexically ambiguous and that AMPs are invalid when the 'ought's have different senses — e.g., if a moral 'ought' is used in the conclusion and some sort of non-moral 'ought' is used in the conditional premise. Second, one might claim that AMPs are valid but that the conditional premises merely supply technical requirements; hence, the conclusions lack normative force. Third, one might say that AMPs are invalid, and not in fact instances of modus ponens, because their conditional premises have a non-obvious logical form. For example, on so-called wide-scoping accounts — as advanced by John Broome, Jonathan Dancy, Stephen Darwall, and R. Jay Wallace, among others — the 'ought's in hypothetical imperatives are practical 'ought's that take wide scope over a material conditional.<sup>3</sup> Accordingly, unembedded 'ought'-claims cannot detach, since one can satisfy the 'ought' in a hypothetical imperative by taking the means *or* by abandoning the end.

There is something importantly right about the intuitions driving these responses, as we will see, but they are insufficient as they stand. Simply positing a lexical ambiguity is problematic. Why stop with only two senses of 'ought' when there are also prudential 'ought's, rational 'ought's, legal 'ought's, aesthetic 'ought's, and so on? Positing that speakers have such a proliferation of 'ought' entries in their lexicons

mon practice of using the term 'hypothetical imperative' broadly to cover cases where the consequent consists of a modal claim about what an agent ought or must do.

<sup>3</sup>See, e.g., Hill 1973, Greenspan 1975, Darwall 1983, 2001, Gensler 1985, Hampton 1998, Broome 1999, 2001b, 2002, 2004, 2007, Dancy 2000, Wallace 2001, Way 2010. Terminology varies among authors. See also the references in n. 17 for discussion.

is profligate and unexplanatory.<sup>4</sup> As for the technical requirements response, it fails to capture the *practicality* of AMPs, or their connection with motivation and action. Wide-scoping accounts have the advantage of treating AMPs as practical arguments, insofar as they understand hypothetical imperatives as injunctions to have certain sorts of coherent combinations of attitudes and actions. These accounts gain traction from the intuition that there does seem to be something irrational in not taking or intending the believed necessary means to an intended end. However, one might worry that the wide-scoping response leaves agents in a sort of practical deadlock—"Either abandon the end or take the necessary means!"—and thus does not adequately capture the directiveness of hypothetical imperatives in practical reasoning.<sup>5</sup> It is not counterintuitive that at least sometimes we can derive action-guiding principles from considerations about our goals and the available means to them. Although the wide-scoping response blocks seemingly problematic conclusions like the one in (2\*), one might worry that it blocks too much.

### 2.1 *Wide-scoping: An obituary*

These normative concerns with the wide-scoping account are suggestive but not decisive. The wide-scoper might deny that the role of wide-scope rational requirements is to guide one's practical reasoning toward some specific intention or action. Or she might say that wide-scope requirements must be supplemented with further narrow-scope considerations, perhaps concerning the agent's reasons for abandoning the end or taking the necessary means, in order to issue a specific injunction (Broome 2007). In light of these possible responses I want

<sup>4</sup>Cf. Grice's "Modified Occam's Razor": "Senses are not to be multiplied beyond necessity" (1989, 47–49). For discussion, in the ethics literature, of proliferating senses of 'ought', see, e.g., Wertheimer 1972, Jackson 1991, Finlay 2009, 2010, and van Roojen 2010 (cf. Brandt 1964, 381). For discussion in philosophy of language and linguistics, see especially Kratzer 1977, 1981, 1991; see also, among many others, Lyons 1977, Perkins 1983, Brennan 1993, Groefsema 1995, Papafragou 2000, and Palmer 2001 (though cf. Coates 1983, Palmer 1990).

<sup>5</sup>Cf. Kolodny 2005, 527–530; Schroeder 2004, 339–340; Bedke 2009, 687–689.

to examine the wide-scoping analysis from a different angle. Though wide-scoping responses to the detaching problem are not typically put forward with linguistic considerations in mind, this does not render them immune from linguistic objections. The wide-scoping analysis constitutes a substantive hypothesis about the logical form and meaning of hypothetical imperatives. This hypothesis is not innocent.

First let's improve the wide-scoping analysis in response to some preliminary concerns. One might object to wide-scoping accounts on the grounds that analyses of indicative conditionals in terms of material implication face well-known problems:<sup>6</sup> Since material conditionals play no role in the formalization of indicative conditionals, *a fortiori* they play no role in the formalization of hypothetical imperatives, which are a species of indicative conditional. This is essentially the objection found in Dowell 2012.

This objection is too quick. Even if indicative conditionals are not to be analyzed in terms of a two-place material conditional connective, indicative conditionals can still sometimes be *interpreted* as material conditionals in certain contexts. Consider the paradigm restrictor analysis of conditionals from Angelika Kratzer (1981, 68–69; 1991, 648–649), following Lewis 1975. (The following points could also be made in terms of the "variably strict" analyses in Stalnaker 1968 and Lewis 1973.) Though the details would take us too far afield, on this view 'if'-clauses restrict the domains of operators like modals, and modals are treated as quantifiers over possible worlds (§3). Material implication is expressed when the 'if'-clause "restricts" an implicit necessity modal whose domain is already restricted to the actual world (or, more precisely, to the world of evaluation). On a material conditional interpretation, 'If  $\phi$ ,  $\psi$ ' is true iff ' $\phi$ ' is true at all worlds identical to the actual world; that is, the conditional is true iff either ' $\phi$ ' is false—in which case  $\psi$  is trivially necessary—or ' $\psi$ ' is true.

<sup>6</sup>For survey discussions, see, e.g., Edgington 1995, 241–247; Bennett 2003, 20–44. Cf. Lewis 1975, Kratzer 1991.

A linguistically improved wide-scope analysis—call it 'WIDE-SCOPE<sup>+</sup>'—might treat the 'ought's in hypothetical imperatives as taking wide scope over a conditional that expresses material implication in this way. Assuming that deontic modals like 'ought' quantify over a set of deontically best worlds, we can, in the spirit of the wide-scope strategy, still capture how hypothetical imperatives like (P<sub>3</sub>) are true and how (P<sub>3</sub>) and (P<sub>4</sub>) do not entail (C<sub>2</sub>). (P<sub>3</sub>) is true because in the deontically best worlds no one wants to torture innocent people. So, 'If you want to torture innocent people like they did in medieval times, you torture them with thumbscrews', interpreted as a material conditional, is trivially true at all the deontically best worlds. Nonetheless, even if (P<sub>4</sub>) is true, (C<sub>2</sub>) is false, since it's not the case that in all of the deontically best worlds you torture innocent people with thumbscrews. So is the wide-scooper off the semantic hook?

Unfortunately not. First, at least on a standard restrictor analysis of conditionals like Kratzer's, 'if'-clauses must restrict the domain of some operator, like a modal. But once the overt 'ought' in a hypothetical imperative takes wide scope and is left unrestricted (or, if restricted, only implicitly so by the context), this leaves no operator for the 'if'-clause to restrict. In response the wide-scooper could posit that there is an implicit necessity modal in hypothetical imperatives that scopes over the (now unmodalized) consequent and is restricted by the antecedent. However, although covert modals have been posited in various conditional constructions, on such analyses it is the covert modal that takes wider scope.<sup>7</sup> WIDE-SCOPE<sup>+</sup> would thus lack independent motivation.

Even with these technical problems notwithstanding, WIDE-SCOPE<sup>+</sup> gets the meanings of hypothetical imperatives wrong. For the sake of argument, assume that (P<sub>3</sub>) contains a covert modal whose domain is restricted to the world of evaluation, so that the conditional under the wide-scoped deontic 'ought' expresses material implication. Since

'ought' shifts the world of evaluation to the deontically best worlds, the domain of this covert modal gets restricted to each of the deontically best worlds. But further restricting this domain to those where you want to torture innocent people yields the empty set; in none of the best worlds do you want to torture innocent people. (P<sub>3</sub>) then comes out true because the proposition that you torture innocent people with thumbscrews is trivially a necessity with respect to the empty set.

Somewhat more formally, the truth conditions of (P<sub>3</sub>) according to WIDE-SCOPE<sup>+</sup> are roughly as in (3) or, simplifying a bit, as in (4).

- (3) (P<sub>3</sub>) is true at a world  $w$  iff:  
for all deontically best worlds  $w'$ : for all worlds  $w''$  consistent with all the facts in  $w'$  in which you want to torture innocent people like they did in medieval times: you use thumbscrews in  $w''$
- (4) (P<sub>3</sub>) is true at a world  $w$  iff:  
for all deontically best worlds  $w'$  in which you want to torture innocent people like they did in medieval times: you use thumbscrews in  $w'$

For every deontically best world  $w'$ , intersecting  $\{w'\}$  with the set of worlds in which you want to torture innocent people like they did in medieval times yields the empty set. Since any proposition—and so the proposition expressed by 'you torture innocent people with thumbscrews'—is trivially a necessity with respect to the empty set, (P<sub>3</sub>) comes out true.

But this gets the meaning of (P<sub>3</sub>) all wrong. First, the analysis incorrectly predicts that any hypothetical imperative beginning with 'If you want to torture innocent people like they did in medieval times...' is trivially true—even one with 'you ought *not* torture them with thumbscrews' as the consequent. If (P<sub>3</sub>) is true, it is not trivially true in the way predicted by WIDE-SCOPE<sup>+</sup>. Second, we may even be granting too much in conceding that WIDE-SCOPE<sup>+</sup> predicts that (P<sub>3</sub>) is true. As is well-known, when quantifier domains are empty, this typically results

<sup>7</sup>See Frank 1996, Geurts 2004, von Fintel and Iatridou 2005, Leslie 2009, Swanson 2010, and Silk 2010.

in infelicity.<sup>8</sup> (Cf. 'Every unicorn around here...' or 'If Massachusetts isn't in the United States...') But there is nothing odd about (P3).

In sum, in order to respond to the detaching problem, the wide-scooper's analysis of the major premise must (a) capture in what way the major premise is true, and (b) invalidate detachment. Though WIDE-SCOPE<sup>+</sup> does invalidate detachment, even if it predicts that (P3) is true, (P3) comes out true for the wrong reasons. The features of WIDE-SCOPE<sup>+</sup> that would allow it to predict the truth of (P3) generate incorrect predictions about the truth conditions of other hypothetical imperatives.

Similar considerations show that the wide-scoping analysis founders in response to quantificational variants of the detaching problem. Consider a domain with five people—*A*, *B*, *C*, *D*, *E*—each of whom aims to torture innocent people with thumb screws. Now consider the following argument:

- (5) (P5) Most people who want to torture innocent people like they did in medieval times ought to torture them with thumb screws.
- (P6) *A*, *B*, and *C* each wants to torture innocent people like they did in medieval times.
- (C3) So, *A* ought to torture innocent people with thumb screws, or *B* ought to torture innocent people with thumb screws, or *C* ought to torture innocent people with thumb screws.

Intuitively, the conclusion must be true if the premises are true. If (P5) is true, at least three people out of *A*–*E* are such that they ought to use thumb screws to do their torturing. So, for any three individuals out of *A*–*E*—e.g., *A*, *B*, and *C*, as per (P6)—it follows that at least one of them ought to use thumb screws—as per (C3).

As with (2\*), the wide-scooper will say that (5) is invalid. An initial problem, however, is that she cannot argue that (5) is invalid by claiming that the 'ought' in (P5) takes wide scope over a material conditional. In short, it can't be that 'ought' takes wide scope over a material conditional in (P5), since the 'ought'-claim in (6) can be satisfied without the 'ought'-claim in (P5) being satisfied.<sup>9</sup>

- (6) Most people ought to ensure that (they want to torture innocent people like they did in medieval times  $\supset$  they use thumb screws).

Consider a domain consisting of 100 people, 10 of whom want to torture innocent people like in medieval times. None of the 10 torture-wanters use thumb screws. Then the 'ought' in (6) is satisfied: 90 of the 100 people have the property of either torturing with thumb screws or not wanting to torture innocent people like in medieval times, since they do not have the goal in question. However, the 'ought' in (P5) is not satisfied: none of the 10 torture-wanters use thumb screws. So, (P5) is not equivalent to (6). So, there is no material conditional in the formalization of (P5) for the 'ought' to scope over.

Paralleling our dialectic above, the wide-scooper might respond by dropping the claim that it is a material conditional that 'ought' is scoping over in (P5). Instead she might represent (P5) as follows, treating 'most' as a generalized quantifier.

- (7) OUGHT (most *x*: *x* wants to torture innocent people like they did in medieval times) (*x* tortures them with thumb screws)

Roughly, on this analysis (P5) says that it ought to be that (for most *x* such that *x* wants to torture mediocrally, *x* uses thumb screws). This handles our objection above. However, like we saw in the conditional case, this "improvement" makes incorrect predictions about (P5). If

<sup>8</sup>See, e.g., Strawson 1952, Geurts and van der Sandt 1999.

<sup>9</sup>The point is a general one: as work in generalized quantifier theory has shown, material conditionals simply do not play a role in formalizing sentences with nominal quantifiers. See, e.g., Lewis 1970, Montague 1973, Barwise and Cooper 1981, McCawley 1981. Cf. Lewis 1975 on adverbial quantifiers.

the quantifier 'most' has an empty domain, the analysis predicts that (P5)—and any sentence of the form 'Most people who want to torture innocent people ought to  $\phi$ '—should be infelicitous. (Cf. 'Most unicorns...'.) But (P5) is perfectly acceptable. So we still do not have an analysis of (P5) which predicts that it is both true and felicitous. The wide-scooper is without a solution to quantificational variants of the detaching problem.

It is worth clarifying the scope of these objections. The arguments in this section do not *by themselves* show that there are no wide-scope rational requirements. What they show is that wide-scoopers should stop appealing to natural language intuitions about hypothetical imperatives and the (in)validity of arguments like (2\*) in their arguments for there being wide-scope requirements. There may be independent arguments for the conclusion that there are such requirements. But these arguments will need to be just that: *independent*—that is, independent of linguistic intuitions like the intuition that arguments like (2\*) are invalid.

The considerations in this section suggest the following desiderata for a response to the detaching problem. An adequate solution must

- Capture the different reactions we have to different sorts of AMPs: AMPs with plausible conclusions can seem valid, lending support to their conclusions; but AMPs with implausible conclusions seem invalid, lending no support to their conclusions.
- Capture how, at least sometimes, hypothetical imperatives can be used to generate normative, action-guiding conclusions.
- Capture as much commonality in interpretations of 'ought' as the data allows.
- Be semantically adequate and extend to quantificational variants.

### 3. Why 'ought' detaches

I will argue that a stock analysis of modals and conditionals from formal semantics suggests a solution to the detaching problem. I am sympathetic to the standard view among formal semanticists that although

modals can be used to express different flavors of modality, "there is something in the meaning [of the modal...] which stays invariable" (Kratzer 1977, 340; see also n. 4). For instance, there seems to be something common to the meaning of 'ought' in the various interpretations in (8).

- (8)
- (Given when she said she left,) Alice ought to be here by now. [epistemic]
  - (Given her aim of getting into a good college,) Alice ought to study hard. [teleological]
  - (In view of what morality requires,) Alice ought to help the poor. [deontic]

This ability to take on different readings in different contexts is common among modal expressions across languages.<sup>10</sup> These considerations speak against treating modals as multiply ambiguous and building particular readings into their conventional meanings. The orthodox view in reply is to treat modals as having a rather skeletal conventional meaning and receiving a particular reading—moral, teleological, epistemic, etc.—only relative to certain forms of contextual supplementation. According to the most influential version of this idea, from Angelika Kratzer (1981; 1991), modals must be interpreted relative to two "conversational backgrounds", or functions from possible worlds into sets of propositions. These conversational backgrounds determine a *modal base*—which determines a set of accessible worlds—and an *ordering source*—which induces an ordering on these worlds. In a sentence like (1), the modal base is circumstantial—a set of propositions describing the relevant circumstances (e.g., your location, the traffic conditions, etc.); and the ordering source is teleological—a set of propositions describing the contents of your goals. Roughly, the modal quantifies over those worlds consistent with the modal base that are "best" in view of the ideal set up by the ordering source. To a first

<sup>10</sup>See Perkins 1983, Bybee *et al.* 1994, Palmer 2001 (though *cf.* van der Auwera *et al.* 2005).

approximation, 'Ought  $\phi$ ' is true iff ' $\phi$ ' is true at all the relevant worlds that rank highest in the ordering.<sup>11</sup> Importantly, on this type of analysis, modals are not ambiguous; they are not like 'bank'. Rather, they are semantically incomplete and context-dependent; they have different readings in different contexts from different contextual resolutions of modal base and ordering source.

In some way to be specified, the antecedent of a hypothetical imperative introduces a goal the content of which is used to order the accessible worlds. I need not take a stand here on precisely how the content of the goal mentioned in the antecedent figures into the overt modal's ordering source; that it does figure in this way is acknowledged by all in the literature on anankastic conditionals.<sup>12</sup> (For now let's make the simplifying assumption that the relevant agent's goals are jointly consistent with one another and with the goal introduced in the antecedent of the hypothetical imperative. I return to these assumptions in §4.) Making explicit the relevant conversational backgrounds, this suggests the following informal paraphrase of (P1).

- (9) Given the relevant circumstances, and ordering alternatives in terms of their satisfaction of your goal of going to the Hancock Building, taking Michigan Avenue is best.

As this brings out, the modal base of 'ought' is the set of propositions describing the relevant circumstances, and the ordering source consists of, or contains, the proposition that you go to the Hancock Building.

With this informal analysis of (P1) at hand, let's return to (1\*).

<sup>11</sup>For simplicity I make the limit assumption (Lewis 1973, 19–20) to ensure that there is a set of most highly ranked worlds. I also bracket differences in strength between weak necessity modals like 'ought' and strong necessity modals like 'must' (see Silk 2014 and references therein).

<sup>12</sup>See, e.g., Sæbø 2001, von Fintel and Iatridou 2005, Huitink 2005a,b, von Stechow *et al.* 2006, Silk 2010.

- (1\*) (P1) If you want to go to the Hancock Building, you ought to take Michigan Avenue.  
 (P2) You want to go to the Hancock Building.  
 (C1) So, you ought to take Michigan Avenue.

Will the unembedded 'ought'-claim in (C1) detach from (P1) and its antecedent condition (P2)? We can now see that this question is incomplete. Since modals have a rather skeletal meaning, the proper question is whether, given a particular reading, the 'ought'-claim detaches *on that reading*. In response, we can answer thus: Yes—and this is the important point—but only if 'ought' is given the same interpretation in the conclusion as in the premises. Recall that modal sentences express propositions only relative to certain conversational backgrounds. So, (1\*) will be valid, but only if the 'ought's in (P1) and (C1) are interpreted relative to the same modal base and ordering source (or at least relative to modal bases and ordering sources that do not change beyond the limits set by logical consequence).<sup>13</sup> Given our interpretation of (P1), the 'ought'-claim in the conclusion will detach only if 'ought' takes the circumstantial modal base describing the relevant facts and

<sup>13</sup>Though contexts do change in evolving discourses and deliberation, I take it that validity, in the sense relevant to the evaluation of logical arguments in favor of a particular conclusion, requires interpretation with respect to a stable or constant context—where contexts are the sorts of things that, among other things, provide modals' domains of quantification. This point has been emphasized in a variety of areas—e.g., in discussions of conditionals (Stalnaker 1984, 125–126; von Fintel 2001), negative polarity items (von Fintel 1999, Kadmon and Landman 1993), vagueness (Lewis 1979, 353–354), and epistemic contextualism (DeRose 2009, chs. 4–5). More formally, I have in mind the following notion of validity (where  $\llbracket \alpha \rrbracket^c$  is the possible worlds proposition expressed by  $\alpha$  in context  $c$ ):

- (i)  $\alpha_1, \dots, \alpha_n$  entail  $\beta$  iff for all contexts  $c$ :  $\llbracket \alpha_1 \rrbracket^c \cap \dots \cap \llbracket \alpha_n \rrbracket^c \subseteq \llbracket \beta \rrbracket^c$



the teleological ordering source describing the contextually specified goals.

Now turn to the more problematic (2\*).

- (2\*) (P3) If you want to torture innocent people like they did in medieval times, you ought to torture them with thumb-screws.
- (P4) You want to torture innocent people like they did in medieval times.
- (C2) So, you ought to torture innocent people with thumb-screws.

The 'want' in (P3)'s antecedent can trigger a teleological reading of the 'ought' in the consequent, which is part of why we may find (P3) intuitively correct. However, when 'ought' is unembedded—like in (C2)—we may be inclined to pick an ordering source that is most appropriate in light of the content of the 'ought'-claim. So, sentences like (C2) tend to strike us as false when uttered on their own—and even perhaps in the context of the argument in (2\*)—because certain actions, like torture, tend to trigger a moral context, a context in which moral norms are salient. In typical contexts we are likely to fill out (C2) as follows: "Ordering alternatives in terms of the content of morality, torturing innocent people with thumb-screws is best." This is clearly false. However, this does not show that 'ought' does not detach. Rather, on the one hand, if the conclusion is interpreted in this way, (2\*) is invalid, because 'ought' takes different implicit ordering sources in (P3) and (C2)—i.e., teleological and moral, respectively. On the other hand, if 'ought' is given the same moral interpretation throughout, the argument is valid but unsound, since the conditional is false. In this way, the general Kratzer semantics allows us to capture the intuition driving the ambiguity response in §2 in an explanatory, theoretically satisfying way, and without positing a lexical ambiguity.<sup>14</sup>

<sup>14</sup>For discussion of how context helps select for particular readings of modals, see the linguistics references in n. 4. See Dowell 2012 for a similar,

Similar remarks hold for our quantificational variant of the detaching problem in (5).

- (5) (P5) Most people who want to torture innocent people like they did in medieval times ought to torture them with thumb-screws.
- (P6) *A*, *B*, and *C* each wants to torture innocent people like they did in medieval times.
- (C3) So, *A* ought to torture innocent people with thumb-screws, or *B* ought to torture innocent people with thumb-screws, or *C* ought to torture innocent people with thumb-screws.

In (P5), the phrase 'people who want to torture innocent people' restricts the domain of the quantifier 'most'. Roughly, (P5) is true iff most values for *x* that satisfy '*x* wants to torture innocent people' satisfy 'ought(*x* uses thumb-screws)'. (P5) says that most people who want to torture innocent people are such that in view of their goals, using thumb-screws is best. If (P6) is true, we will be able to validly derive the conclusion, but—as in (2\*)—only if the 'ought's are given the appropriate teleological interpretations: in view of their respective goals, either *A*, *B*, or *C* ought to use thumb-screws to do their torturing.

Thus, intuitions that 'ought' does not detach may result from giving 'ought' a different reading in the unembedded conclusion than in

independently developed view (cf. Wertheimer 1972, 95–96; Jackson 1985, 191–192). However, first, as discussed in §2, Dowell's objections to the wide-scope view are inconclusive. Second, Dowell doesn't address the role of hypothetical imperatives in practical reasoning (see below in this section and §4). Third, *pace* Dowell, accepting this sort of response to the detaching problem won't allow one to hold on to modus ponens for the indicative conditional, at least if one accepts a restrictor analysis for conditionals, as Dowell as does; such an analysis doesn't validate modus ponens anyway. (However, it is worth mentioning that this violation of modus ponens is due to general features of the semantics of modals and conditionals (see Silk 2013). The point in the main text can thus be understood as saying that if (2\*) is invalid it is not because of any features that distinguish it from (1\*). The (in)validity of (1\*) and (2\*) stand or fall together. I return to this issue in §4.)

the hypothetical imperative—specifically, by interpreting 'ought' relative to different ordering sources. But if we give 'ought' a constant teleological interpretation, even (2\*) is sound; we can conclude that your torturing innocent people with thumbscrews is best in view of your goals. Of course, the conclusion will have only modest practical import. But this is not surprising. We should not expect to derive conclusions about what we ought to do considering what is moral from premises about what we ought to do considering our goals—that is, unless we add the dubious assumption that we morally ought to do whatever will realize our goals.

Finally, the considerations in this section suggest an explanation for an otherwise puzzling type of AMP that has been ignored in the literature. Consider (10).

- (10) (P7) If you want to be a decent person, you ought to help the poor.  
 (P8) You want to be a decent person.  
 (C4) So, you ought to help the poor.

On the one hand, this argument may strike us as unobjectionable. The conclusion is true and seems to detach. But, on the other hand, there is something strange about (10). After all, we tend to think that there are better factors grounding one's obligations to the poor beyond one's goals. We now have the resources to explain these two intuitions. First, the argument may seem unproblematic because the conclusion is true on the moral reading we may be inclined to give it: considering what is moral, you ought to help the poor. However, second, the argument may seem odd since, as above, we do not think that moral 'ought's follow from facts about our goals, whatever they are, and what will realize them. Instead, the conclusion that follows is simply that, considering your goal of being a decent person, you ought to help the poor. So, as above, though the practical import of the conclusion in (10), on the relevant teleological reading, is modest, the conclusion does detach.

Thus, the intuitive appeal of (10) over (2\*) is spurious. (10) may strike us as unobjectionable because, as it turns out, ordering alter-

natives in terms of the content of morality and in terms of your goal of being a decent person, giving to the poor is best. In contrast, (2\*) strikes us as problematic because ordering alternatives in terms of the content of morality, it's not the case that torturing innocent people with thumbscrews is best—even if ordering alternatives in terms of your goals, this action *is* best.<sup>15</sup>

I have argued that 'ought' detaches in the following sense: Given the truth of a hypothetical imperative and its antecedent condition, we can derive a claim about what one ought to do in view of certain relevant goals. Contrary to much of the literature on rational requirements and instrumental reason (see nn. 3, 17), the 'ought's in natural language hypothetical imperatives are given a goal-based interpretation, not a moral or practical interpretation.<sup>16</sup> This has obscured theorizing about the normative import of AMPs. What should we say, then, about the practical upshot of these arguments? In §2 we noted that hypothetical imperatives do not seem to be practically inert. Even though in AMPs we can only detach modest teleological 'ought'-claims, we can still capture the intuition that hypothetical imperatives can often

<sup>15</sup>In a recent response to the detaching problem, Stephen Finlay (2010) uses what he takes to be an alternative to a Kratzerian ordering semantics for modals and conditionals in an argument that 'ought' does *not* detach (see also his 2009). I do not speak to Finlay's account in this paper. Most important for our purposes is that Finlay's semantics for strong necessity modals ('must', 'have to') validates detachment in the modest sense described in this section. Finlay's comparative probability semantics for weak necessity modals like 'ought' raises issues orthogonal to the central points in this paper (see n. 11). (Also, despite Finlay's claims to the contrary, his analyses can be understood as instances of the general Kratzerian ordering semantics/premise semantics framework.)

<sup>16</sup>This is not to say that all conditionals of the same surface form as (P1) or (P3) have an anankastic meaning. The 'ought' in (i) may be given a moral reading (*cf.* Hare 1971, 45).

(i) If you want to torture innocent people like they did in medieval times, you ought to see a psychiatrist.

However, conditionals like (i) are not hypothetical imperatives in the sense relevant in the sorts of arguments that give rise to the detaching problem.

be used in deliberation to generate normative, action-guiding conclusions.

Purpose 'in order to'-sentences — sentences like 'In order to get to the Hancock building, you have to take Michigan Avenue' — express technical requirements. They are claims about the necessary means to certain ends. But hypothetical imperatives do not merely express technical requirements. In hypothetical imperatives we deploy those requirements in the service of meeting certain ends, in effect by plugging them into ends that have those requirements. The apparent normative force of hypothetical imperatives derives from the fact that we often take our ends to supply us with at least *pro tanto* reasons for action, reasons to take the means to those ends (or at least the optimal or necessary means). Many find it plausible that from the fact that, considering my goals and the relevant circumstances, I ought to  $\phi$ , I can often conclude that I have at least a *pro tanto* reason to  $\phi$  — this in light of an implicit premise like the following:

- (11) BRIDGE  
If, considering certain of one's goals and the relevant circumstances, one ought to  $\phi$ , then, at least in most circumstances, one has at least a *pro tanto* reason to  $\phi$ .

This principle is weak in two ways. First, as the "at least in most circumstances" qualification suggests, BRIDGE is weaker than the claim that for any set of goals, one has a normative reason to do whatever will best realize them. This stronger claim is contentious; many philosophers reject it.<sup>17</sup> Though I find the weaker claim in BRIDGE to be plausible, I will not attempt to defend it here. Second, BRIDGE leaves open, for any particular AMP, how much normative reason (if any) it supplies. The normative import of a hypothetical imperative on some

occasion may depend on the strength of the normative reasons supplied by the goals in question, given the agent's circumstances. What is important for present purposes is that AMPs are valid arguments that yield lemmas that may be used in larger pieces of practical reasoning. The extent to which one takes these lemmas to generate further practical conclusions about one's normative reasons for action depends on one's broader commitments about substantive normative principles like BRIDGE.

#### 4. Detachment and salient goals

In this section I would like to revisit certain of our simplifying assumptions from §3. There I assumed that the relevant agent's goals are jointly consistent with each other and with the goal introduced in the hypothetical imperative. For purposes of generality I also abstracted away from technical details regarding how the intended truth conditions of hypothetical imperatives are generated. However, it is worth noting that certain semantics for hypothetical imperatives do not validate modus ponens, even when the premises and conclusion are all evaluated with respect to a constant global context (see n. 13).

On the semantics in von Fintel and Iatridou 2005 and Huitink 2005a,b, modals can sometimes be interpreted with respect to certain designated or contextually salient goals rather than with respect to all of the agent's goals. (Differences in their analyses will not be relevant here. Huitink generalizes this point to other types of ordering sources.) A teleological ordering source can consist of a set of propositions describing some contextually salient subset of the agent's goals. First, suppose that in the conversational context  $c$ , your salient goals (and the relevant circumstances) are such that in view of them, you ought to  $\phi$ , where your  $\phi$ -ing is incompatible with your taking Michigan Avenue. For example, suppose that your goal of going to Wrigley Field is salient in the context, and that in light of this goal you ought to take Clark Street. Second, note that one way of making a goal highly salient is to introduce it in the antecedent of a conditional. Supposing, as is standard, that the consequent of a conditional is to be interpreted

<sup>17</sup>See Bratman 1987 and Broome 2001a for important critiques. For further discussion, see Korsgaard 1997, Schroeder 2004, 2005, Kolodny 2005, 2007, 2008a,b, Raz 2005, Piller 2007, Scanlon 2007, Setiya 2007, van Roojen 2008, Bedke 2009, Dreier 2009, Railton 2010, Way 2010. See also the references in n. 3.

with respect to the local context  $c^+$  set up by its antecedent—i.e., the global discourse context incremented with the proposition expressed by the antecedent<sup>18</sup>—(P<sub>1</sub>) can still be true in the global context  $c$ . This is because the introduction of the goal in the antecedent shifts the context relevant for the interpretation of the consequent to  $c^+$  where it is your goal of going to the Hancock Building that is salient. As it turns out, you do want to go to the Hancock Building; you have incompatible goals. However, your goal of going to the Hancock Building is not salient in the global context  $c$ . Call this case 'WRIGLEY'.

Given this description of your goals and their relative salience in the global conversational context  $c$ , the following sentences are all true in  $c$ , even where both 'ought's are given a teleological interpretation.

- (12) a. You ought to take Clark Street. ( $\Rightarrow$  It's not the case that you ought to take Michigan Avenue.)  
 b. If you want to go to the Hancock Building, you ought to take Michigan Avenue.  
 c. You want to go to the Hancock Building.

As is evident, the consistency of (12) violates modus ponens. (Not to worry: this is modus ponens for the indicative conditional, not the truth-functional material conditional.) This violation is unsurprising on the "salient goal" analysis. First, though it might be *true* that you want to go to the Hancock Building, this goal is not salient in the global context. Since teleological modals can be sensitive to what goals are salient, the mere fact that you have a certain goal, together with the truth of an associated hypothetical imperative, will not be sufficient to entail the consequent of the hypothetical imperative. Second, since the consequent of a conditional is interpreted with respect to its local context, the ordering source for the teleological modal in (12b) may only contain the proposition that you go to the Hancock Building. So, the

sentences in (12)—even when both 'ought's are interpreted teleologically—can all be true with respect to a constant global context.<sup>19</sup>

With respect to our constant context  $c$ , (C<sub>1</sub>) is not entailed by (P<sub>1</sub>) and (P<sub>2</sub>), at least on a salient-goal-style semantics. However, this poses no threat to our claim in §3 about why, and in what sense, 'ought' detaches. Even if we have a failure of modus ponens in cases like WRIGLEY, we do not have a failure of detachment in the sense that ethicists have cared about. First, the reasons why detachment fails in WRIGLEY have nothing to do with the considerations that concerned us in §1. There we were worried about detachment because of an illicit shift in context; we were interpreting (C<sub>2</sub>) and (P<sub>3</sub>) with respect to different types of ordering sources. In WRIGLEY detachment fails because of general features of the semantics of modals and conditionals. So, we can still maintain that 'ought' detaches in the sense described in §3: given the truth of a hypothetical imperative and its antecedent condition, we can detach a claim about what the agent ought to do in view of the goal described in the minor premise and the antecedent of the conditional. More generally, 'ought's will detach in AMPs where the goal introduced in the antecedent of the hypothetical imperative is consistent with the other goals that are salient in the context (though see n. 13).

Second, though modus ponens inferences like WRIGLEY are not classically valid, they are valid in another sense: they are *dynamically* valid. Roughly, for a set of premises to dynamically entail a conclusion, it must be that when the premises are successfully asserted and accepted, the context set of the evolving context entails the proposition expressed by the conclusion in that evolved context.<sup>20</sup> (The "context set" is the

<sup>19</sup>Readers familiar with the recent literature on the Miners Puzzle may have noticed that the reasons for modus ponens violations with hypothetical imperatives are structurally analogous to the reasons for modus ponens violations with information-sensitive deontic 'ought'. See, e.g., Kolodny and MacFarlane 2010 and Silk 2013 for discussion.

<sup>20</sup>Compare the notion of a "reasonable inference" in Stalnaker 1975, an important inspiration for much work in dynamic semantics. See Veltman 1996 on various notions of dynamic entailment. See Willer 2012 and Silk 2013 for

<sup>18</sup>See, e.g., Karttunen 1974, Stalnaker 1974, Heim 1990.

set of live possibilities in the conversation, the set of worlds consistent with what is mutually presupposed.) In assessments of dynamic validity, premises not only play their usual classical role of ruling out possibilities; they also change the context with respect to which subsequent sentences are interpreted. For instance, in the cases at hand, if evaluating a premise changes which goals are salient, this may affect the interpretation of subsequent sentences in the argument.

Informally, suppose we begin in a context that leaves open whether you want to go to the Hancock Building. (We must do so if the conditional is to be felicitous.) I assert (P<sub>1</sub>), which is successfully added to the common ground. Next, we consider your goal of going to the Hancock Building and I assert (P<sub>2</sub>), which is also accepted. Since (P<sub>2</sub>) is not only true but also accepted, (a) the context set is reduced to worlds where you want to go to the Hancock Building, and (b) your goal of going to the Hancock Building becomes highly salient. This affects the interpretation of 'ought' in (C<sub>1</sub>). Since the 'ought' is interpreted with respect to the now highly salient goal of going to the Hancock Building, the proposition expressed by (C<sub>1</sub>) in this new context is entailed by the resulting context set. So, (P<sub>1</sub>) and (P<sub>2</sub>) dynamically entail (C<sub>1</sub>). In any context in which the first two are successively asserted and accepted, the resulting context is such that asserting the third would not bring about a change in the context (except for adding the fact that it has been asserted).<sup>21</sup> In deliberation and conversation we can legitimately detach claims about what we ought to do in view of the

relevant goals from associated hypothetical imperatives upon learning, or merely reminding ourselves of, the truth of their antecedent conditions.

## 5. Conclusion

On a broadly Kratzerian analysis of modals, modals like 'ought' have a rather skeletal meaning and receive a particular reading or interpretation only given certain forms of contextual supplementation. I have argued that 'ought'-claims can detach in the following sense: they can be derived from associated conditionals and their antecedent conditions, but only as long as the 'ought's are interpreted relative to the same (teleological) ordering sources. Concerns about whether 'ought' detaches occur when the ordering source relevant for the interpretation of the 'ought' in the hypothetical imperative yields a different verdict for the status of the proposition embedded under the modal than the most (or a) likely candidate ordering source relevant for the interpretation of the 'ought' in the conclusion were the conclusion considered on its own. Detached 'ought'-claims can play an important role in practical reasoning. They can serve as lemmas which, in conjunction with certain substantive normative assumptions, may figure in larger practical arguments to generate conclusions about one's reasons for action. The present account also improves upon rival wide-scoping accounts. Unable to generate the correct meanings of certain quantified 'ought'-sentences, wide-scoping accounts cannot adequately solve quantificational variants of the detaching problem.<sup>22</sup>

discussion of the importance of a dynamic notion of entailment in logics and semantics for information-sensitive deontic modals.

<sup>21</sup>See Silk 2013 for a proof in the case of information-sensitive deontic modals.

<sup>22</sup>For helpful discussion, thanks to Nate Charlow, Bernhard Nickel, Peter Railton, Eric Swanson, two anonymous referees from *Philosophers' Imprint*, and audiences at the 2010 Australasian Association of Philosophy Conference, the 2011 Harvard-MIT Graduate Philosophy Conference, the 2011 Indiana Philosophical Association Spring Meeting, the 2011 Rocky Mountain Ethics Congress, and the 2011 Eastern APA.

## References

- Ana Arregui. Detaching *if*-clauses from *should*. *Natural Language Semantics*, 18:241–293, 2010.
- Johan van der Auwera, Andreas Ammann, and Saskia Kindt. Modal polyfunctionality and Standard Average European. In Alex Klinge and Henrik Høeg Müller, editors, *Modality: Studies in form and function*, pages 247–272. Equinox, London, 2005.
- Jon Barwise and Robin Cooper. Generalized quantifiers and natural language. *Linguistics and Philosophy*, 4:159–219, 1981.
- Matthew S. Bedke. The iffiest oughts: A guise of reasons account of end-given conditionals. *Ethics*, 119:672–698, 2009.
- Jonathan Bennett. *A philosophical guide to conditionals*. Oxford University Press, Oxford, 2003.
- R.B. Brandt. The concepts of obligation and duty. *Mind*, 73:374–393, 1964.
- Michael E. Bratman. *Intention, plans, and practical reason*. Harvard University Press, Cambridge, 1987.
- Virginia Brennan. *Root and epistemic modal auxiliary verbs*. PhD thesis, University of Massachusetts Amherst, 1993.
- John Broome. Normative requirements. *Ratio*, 12:398–419, 1999.
- John Broome. Are intentions reasons? And how should we cope with incommensurable values? In Christopher M. Morris and Arthur Ripstein, editors, *Practical rationality and preference: Essays for David Gauthier*, pages 98–120. Cambridge University Press, Cambridge, 2001.
- John Broome. Normative practical reasoning. *Aristotelian Society Supplementary Volume*, 75:175–193, 2001.
- John Broome. Practical reasoning. In José Luis Bermúdez and Alan Millar, editors, *Reason and nature: Essays in the theory of rationality*, pages 85–111. Oxford University Press, Oxford, 2002.
- John Broome. Reasons. In R. Jay Wallace, Philip Pettit, Samuel Scheffler, and Michael Smith, editors, *Reason and value: Themes from the moral philosophy of Joseph Raz*, pages 28–55. Oxford University Press, Oxford, 2004.
- John Broome. Does rationality give us reasons? *Philosophical Issues*, 15:321–337, 2005.
- John Broome. Wide or narrow scope? *Mind*, 116:359–370, 2007.
- Joan Bybee, Revere Perkins, and William Pagliuca. *The evolution of grammar: Tense, aspect, and modality in the languages of the world*. University of Chicago Press, Chicago, 1994.
- Jennifer Coates. *The semantics of the modal auxiliaries*. Croom Helm, London, 1983.
- Jonathan Dancy. *Practical reality*. Oxford University Press, Oxford, 2000.
- Stephen L. Darwall. *Impartial Reason*. Cornell University Press, Ithaca, 1983.
- Stephen Darwall. Because I want it. *Social Philosophy and Policy*, 18:129–153, 2001.
- Keith DeRose. *The case for contextualism: Knowledge, skepticism, and context*, volume 1. Oxford University Press, Oxford, 2009.
- J.L. Dowell. Contextualist solutions to three puzzles about practical conditionals. In Russ Shafer-Landau, editor, *Oxford studies in metaethics*, volume 7, pages 271–303. Oxford University Press, Oxford, 2012.
- James Dreier. Practical conditionals. In David Sobel and Steven Wall, editors, *Reasons for action*, pages 116–133. Cambridge University Press, Cambridge, 2009.
- Dorothy Edgington. On conditionals. *Mind*, 104:235–329, 1995.
- Fred Feldman. *Doing the best we can: an essay in informal deontic logic*. Reidel, Dordrecht, 1986.
- Stephen Finlay. Oughts and ends. *Philosophical Studies*, 143:315–340, 2009.
- Stephen Finlay. What *ought* probably means, and why you can't detach it. *Synthese*, 177:67–89, 2010.
- Kai von Fintel and Sabine Iatridou. What to do if you want to go to Harlem: Anankastic conditionals and related matters. MS, MIT, 2005.
- Kai von Fintel. NPI licensing, Strawson entailment, and context de-

- pendency. *Journal of Semantics*, 16:97–148, 1999.
- Kai von Fintel. Counterfactuals in a dynamic context. In Michael Kenstowicz, editor, *Ken Hale: A life in language*, pages 123–152. MIT Press, Cambridge, 2001.
- Anette Frank. *Context dependence in modal constructions*. PhD thesis, University of Stuttgart, 1996.
- Harry J. Gensler. Ethical consistency principles. *Philosophical Quarterly*, 35:156–170, 1985.
- Bart Geurts and Rob van der Sandt. Domain restriction. In Peter Bosch and Rob van der Sandt, editors, *Focus: Linguistic, cognitive, and computational perspectives*, pages 268–292. Cambridge University Press, Cambridge, 1999.
- Bart Geurts. On an ambiguity in quantified conditionals. MS, University of Nijmegen, 2004.
- Patricia S. Greenspan. Conditional oughts and hypothetical imperatives. *Journal of Philosophy*, 72:259–276, 1975.
- Paul Grice. *Studies in the ways of words*. Harvard University Press, Cambridge, 1989.
- Marjolein Groefsema. *Can, may, must, and should: A Relevance theoretic account*. *Journal of Linguistics*, 31:53–79, 1995.
- Jean E. Hampton. *The authority of reason*. Cambridge University Press, Cambridge, 1998.
- R.M. Hare. Wanting: Some pitfalls. In R.M. Hare, editor, *Practical inferences*, pages 44–58. Macmillan, London, 1971.
- Irene Heim. On the projection problem for presuppositions. In Steven Davies, editor, *Pragmatics: A reader*, pages 397–405. Oxford University Press, Oxford, 1990.
- Thomas E. Hill, Jr. The hypothetical imperative. *Philosophical Review*, 82:429–450, 1973.
- Janneke Huitink. Analyzing anankastic conditionals and sufficiency modals. In S. Blaho, L. Vicente, and E. Schoorlemmer, editors, *Proceedings of ConSOLE 13*, pages 135–156, University of Leiden, 2005.
- Janneke Huitink. Anankastic conditionals and salient goals. In Emar Maier, Corien Bary, and Janneke Huitink, editors, *Proceedings of Sinn und Bedeutung 9*, pages 140–154. Nijmegen Center for Semantics, Nijmegen, 2005.
- I.L. Humberstone. Two kinds of agent-relativity. *Philosophical Quarterly*, 41:144–166, 1991.
- Frank Jackson. On the semantics and logic of obligation. *Mind*, 94:177–195, 1985.
- Frank Jackson. Decision-theoretic consequentialism and the nearest and dearest objection. *Ethics*, 101:461–482, 1991.
- Nirit Kadmon and Fred Landman. 'Any'. *Linguistics and Philosophy*, 16:353–422, 1993.
- Lauri Karttunen. Presupposition and linguistic context. *Theoretical Linguistics*, 1:181–194, 1974.
- Niko Kolodny and John MacFarlane. Ifs and oughts. *Journal of Philosophy*, pages 115–143, 2010.
- Niko Kolodny. Why be rational? *Mind*, 114:509–563, 2005.
- Niko Kolodny. State or process requirements? *Mind*, 116:371–385, 2007.
- Niko Kolodny. The myth of practical consistency. *European Journal of Philosophy*, 16(3):366–402, 2008.
- Niko Kolodny. Why be disposed to be coherent? *Ethics*, 118:437–463, 2008.
- Christine M. Korsgaard. The normativity of instrumental reason. In Garrett Cullity and Berys Gaut, editors, *Ethics and practical reason*, pages 215–254. Oxford University Press, New York, 1997.
- Angelika Kratzer. What 'must' and 'can' must and can mean. *Linguistics and Philosophy*, 1:337–355, 1977.
- Angelika Kratzer. The notional category of modality. In Hans-Jürgen Eikmeyer and Hannes Rieser, editors, *Words, worlds, and contexts: New approaches in word semantics*, pages 38–74. de Gruyter, Berlin, 1981.
- Angelika Kratzer. Modality/Conditionals. In Arnim von Stechow and Dieter Wunderlich, editors, *Semantics: An international handbook of contemporary research*, pages 639–656. de Gruyter, New York, 1991.
- Sarah-Jane Leslie. 'If', 'unless', and quantification. In Robert J. Stainton and Christopher Viger, editors, *Compositionality, context and semantic*

- values: *Essays in honour of Ernie Lepore*, pages 3–30. Springer, 2009.
- David Lewis. General semantics. *Synthese*, 22:18–67, 1970.
- David Lewis. *Counterfactuals*. Harvard University Press, Cambridge, 1973.
- David Lewis. Adverbs of quantification. In Edward L. Keenan, editor, *Formal semantics of natural language*, pages 3–15. Cambridge University Press, Cambridge, 1975.
- David Lewis. Scorekeeping in a language game. *Journal of Philosophical Logic*, 8:339–359, 1979.
- John Lyons. *Semantics*, volume 2. Cambridge University Press, Cambridge, 1977.
- James D. McCawley. *Everything that linguists have always wanted to know about logic... but were ashamed to ask*. University of Chicago Press, Chicago, 1981.
- Richard Montague. The proper treatment of quantification in ordinary English. In K.J.J. Hintikka, J.M.E. Moravcsik, and P. Suppes, editors, *Approaches to natural language: Proceedings of the 1970 Stanford Workshop on Grammar and Semantics*, pages 221–242. Reidel, Dordrecht, 1973.
- F.R. Palmer. *Modality and the English modals*. Longman, New York, 2nd edition, 1990.
- F.R. Palmer. *Mood and modality*. Cambridge University Press, Cambridge, 2nd edition, 2001.
- Anna Papafragou. *Modality: Issues in the semantics-pragmatics interface*. Elsevier, Oxford, 2000.
- Michael R. Perkins. *Modal expressions in English*. Ablex, Norwood, 1983.
- Christian Piller. Ewing's problem. *European Journal of Analytic Philosophy*, 3:43–65, 2007.
- Peter Railton. Toward a unified account of rationality in belief, desire, and action. MS, University of Michigan, 2010.
- Joseph Raz. The myth of instrumental rationality. *Journal of Ethics & Social Philosophy*, 1:1–28, 2005.
- Mark van Roojen. Consequents of true practical conditionals detach. MS, University of Nebraska-Lincoln, 2008.
- Mark van Roojen. Moral rationalism and rational amoralism. *Ethics*, 120:495–525, 2010.
- Kjell Johan Sæbø. Necessary conditions in a natural language. In Caroline Fery and Wolfgang Sternefeld, editors, *Audiatur vox sapientiae: A festschrift for Arnim von Stechow*, pages 427–449. Akademie Verlag, Berlin, 2001.
- T.M. Scanlon. Structural irrationality. In Geoffrey Brennan, Robert Goodin, Frank Jackson, and Michael Smith, editors, *Common minds: Themes from the philosophy of Philip Pettit*, pages 84–103. Oxford University Press, Oxford, 2007.
- Mark Schroeder. The scope of instrumental reason. *Philosophical Perspectives*, 18:337–364, 2004.
- Mark Schroeder. The hypothetical imperative? *Australasian Journal of Philosophy*, 83:357–372, 2005.
- Kieran Setiya. Cognitivism about instrumental reason. *Ethics*, 117:649–673, 2007.
- Alex Silk. Anankastic conditionals in context. MS, University of Michigan, 2010.
- Alex Silk. Evidence sensitivity in weak necessity deontic modals. *Journal of Philosophical Logic*, pages 1–33, 2013.
- Alex Silk. 'Ought' and 'must': Some philosophical therapy. MS, University of Birmingham, 2014.
- Robert Stalnaker. A theory of conditionals. In Nicholas Rescher, editor, *Studies in Logical Theory*, pages 98–112. Blackwell, Oxford, 1968.
- Robert Stalnaker. Pragmatic presuppositions. In M. Munitz and Peter K. Unger, editors, *Semantics and Philosophy*, pages 197–213. New York University Press, New York, 1974.
- Robert Stalnaker. Indicative conditionals. *Philosophia*, 5:269–286, 1975.
- Robert Stalnaker. *Inquiry*. MIT Press, Cambridge, 1984.
- Arnim von Stechow, Sveta Krasikova, and Doris Penka. Anankastic conditionals again. In Torgrim Solstad, Atle Grønn, and Dag Haug, editors, *Festschrift for Kjell Johann Sæbø*, pages 151–171. Unipub, Oslo, 2006.
- P.F. Strawson. *Introduction to logical theory*. Methuen, London, 1952.



- Eric Swanson. On scope relations between quantifiers and epistemic modals. *Journal of Semantics*, 27:529–540, 2010.
- Frank Veltman. Defaults in update semantics. *Journal of Philosophical Logic*, 25:221–261, 1996.
- R. Jay Wallace. Normativity, commitment, and instrumental reason. *Philosophers' Imprint*, 1:1–26, 2001.
- Jonathan Way. Defending the wide-scope approach to instrumental reason. *Philosophical Studies*, 147:213–233, 2010.
- Roger Wertheimer. *The significance of sense: Meaning, modality, and morality*. Cornell University Press, Ithaca, 1972.
- Malte Willer. A remark on iff oughts. *Journal of Philosophy*, 109:449–461, 2012.